

PF 55371

SEQUENCE LISTING

<110> BASF Plant Science GmbH

<120> Process for production of unsaturated omega-3-fatty acids in transgenic organisms

<130> PF 55371

<140> 20040003

<141> 2004-02-26

<160> 2

<170> PatentIn version 3.1

<210> 1

<211> 1086

<212> DNA

<213> Phytophthora infestans

<220>

<221> CDS

<222> (1)..(1086)

<223> Omega-3-desaturase

<400> 1

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cgg tcg cta cct aaa gac tgt ttc gag gct tcg gtg cct ctg tcg ctc	96
Arg Ser Leu Pro Lys Asp Cys Phe Glu Ala Ser Val Pro Leu Ser Leu	
20 25 30	
tac tac acc gtg cgt tgt ctg gtg atc gcg gtg gct cta acc ttc ggt	144
Tyr Tyr Thr Val Arg Cys Leu Val Ile Ala Val Ala Leu Thr Phe Gly	
35 40 45	
ctc aac tac gct cgc gct ctg ccc gag gtc gag agc ttc tgg gct ctg	192
Leu Asn Tyr Ala Arg Ala Leu Pro Glu Val Glu Ser Phe Trp Ala Leu	
50 55 60	
gac gcc gca ctc tgc acg ggc tac atc ttg ctg cag ggc atc gtg ttc	240

2

Asp	Ala	Ala	Leu	Cys	Thr	Gly	Tyr	Ile	Leu	Leu	Gln	Gly	Ile	Val	Phe	
65					70					75					80	
tgg	ggc	ttc	ttc	acg	gtg	ggc	cac	gat	gcc	ggc	cac	ggc	gcc	ttc	tcg	288
Trp	Gly	Phe	Phe	Thr	Val	Gly	His	Asp	Ala	Gly	His	Gly	Ala	Phe	Ser	
				85				90						95		
cgc	tac	cac	ctg	ctt	aac	ttc	gtg	gtg	ggc	act	ttc	atg	cac	tcg	ctc	336
Arg	Tyr	His	Leu	Leu	Asn	Phe	Val	Val	Gly	Thr	Phe	Met	His	Ser	Leu	
			100					105						110		
atc	ctc	acg	ccc	ttc	gag	tcg	tgg	aag	ctc	acg	cac	cgt	cac	cac	cac	384
Ile	Leu	Thr	Pro	Phe	Glu	Ser	Trp	Lys	Leu	Thr	His	Arg	His	His	His	
			115					120					125			
aag	aac	acg	ggc	aac	att	gac	cgt	gac	gag	gtc	ttc	tac	ccg	caa	cgc	432
Lys	Asn	Thr	Gly	Asn	Ile	Asp	Arg	Asp	Glu	Val	Phe	Tyr	Pro	Gln	Arg	
			130				135					140				
aag	gcc	gac	gac	cac	ccg	ctg	tct	cgc	aac	ctg	att	ctg	gcg	ctc	ggg	480
Lys	Ala	Asp	Asp	His	Pro	Leu	Ser	Arg	Asn	Leu	Ile	Leu	Ala	Leu	Gly	
					150					155					160	
gca	gcg	tgg	ctc	gcc	tat	ttg	gtc	gag	ggc	ttc	cct	cct	cgt	aag	gtc	528
Ala	Ala	Trp	Leu	Ala	Tyr	Leu	Val	Glu	Gly	Phe	Pro	Pro	Arg	Lys	Val	
				165					170					175		
aac	cac	ttc	aac	ccg	ttc	gag	cct	ctg	ttc	gtg	cgt	cag	gtg	tca	gct	576
Asn	His	Phe	Asn	Pro	Phe	Glu	Pro	Leu	Phe	Val	Arg	Gln	Val	Ser	Ala	
				180				185						190		
gtg	gta	atc	tct	ctt	ctc	gcc	cac	ttc	ttc	gtg	gcc	gga	ctc	tcc	atc	624
Val	Val	Ile	Ser	Leu	Leu	Ala	His	Phe	Phe	Val	Ala	Gly	Leu	Ser	Ile	
				195				200					205			
tat	ctg	agc	ctc	cag	ctg	ggc	ctt	aag	acg	atg	gca	atc	tac	tac	tat	672
Tyr	Leu	Ser	Leu	Gln	Leu	Gly	Leu	Lys	Thr	Met	Ala	Ile	Tyr	Tyr	Tyr	
				210			215				220					
gga	cct	gtt	ttt	gtg	ttc	ggc	agc	atg	ctg	gtc	att	acc	acc	ttc	cta	720
Gly	Pro	Val	Phe	Val	Phe	Gly	Ser	Met	Leu	Val	Ile	Thr	Thr	Phe	Leu	
				225			230			235					240	
cac	cac	aat	gat	gag	gag	acc	cca	tgg	tac	gcc	gac	tcg	gag	tgg	acg	768
His	His	Asn	Asp	Glu	Glu	Thr	Pro	Trp	Tyr	Ala	Asp	Ser	Glu	Trp	Thr	
				245					250					255		
tac	gtc	aag	ggc	aac	ctc	tcg	tcc	gtg	gac	cga	tcg	tac	ggc	gcg	ctc	816
Tyr	Val	Lys	Gly	Asn	Leu	Ser	Ser	Val	Asp	Arg	Ser	Tyr	Gly	Ala	Leu	
				260				265						270		

att gac aac ctg agc cac aac atc ggc acg cac cag atc cac cac ctt 864
Ile Asp Asn Leu Ser His Asn Ile Gly Thr His Gln Ile His His Leu
275 280 285

ttc cct atc att ccg cac tac aaa ctc aag aaa gcc act gcg gcc ttc 912
Phe Pro Ile Ile Pro His Tyr Lys Leu Lys Lys Ala Thr Ala Ala Phe
290 295 300

cac cag gct ttc cct gag ctc gtg cgc aag agc gac gag cca att atc 960
 His Gln Ala Phe Pro Glu Leu Val Arg Lys Ser Asp Glu Pro Ile Ile
 305 310 315 320

aag gct ttc ttc cgg gtt gga cgt ctc tac gca aac tac ggc gtt gtg 1008
Lys Ala Phe Phe Arg Val Gly Arg Leu Tyr Ala Asn Tyr Gly Val Val
325 330 335

gac cag gag gcg aag ctc ttc acg cta aag gaa gcc aag gcg gcg acc 1056
Asp Gln Glu Ala Lys Leu Phe Thr Leu Lys Glu Ala Lys Ala Ala Thr
340 345 350

gag gcg gcg gcc aag acc aag tcc acg taa 1086
Glu Ala Ala Ala Lys Thr Lys Ser Thr
355 360

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<211> 361

<212> PRT

<213> Phytophthora infestans

<400> 2

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Arg Ser Leu Pro Lys Asp Cys Phe Glu Ala Ser Val Pro Leu Ser Leu
20 25 30

Tyr Tyr Thr Val Arg Cys Leu Val Ile Ala Val Ala Leu Thr Phe Gly
35 40 45

Leu Asn Tyr Ala Arg Ala Leu Pro Glu Val Glu Ser Phe Trp Ala Leu
50 55 60

Asp Ala Ala Leu Cys Thr Gly Tyr Ile Leu Leu Gln Gly Ile Val Phe
65 70 75 80

Trp Gly Phe Phe Thr Val Gly His Asp Ala Gly His Gly Ala Phe Ser
 85 90 95

Arg Tyr His Leu Leu Asn Phe Val Val Gly Thr Phe Met His Ser Leu
 100 105 110

Ile Leu Thr Pro Phe Glu Ser Trp Lys Leu Thr His Arg His His His
 115 120 125

Lys Asn Thr Gly Asn Ile Asp Arg Asp Glu Val Phe Tyr Pro Gln Arg
 130 135 140

Lys Ala Asp Asp His Pro Leu Ser Arg Asn Leu Ile Leu Ala Leu Gly
 145 150 155 160

Ala Ala Trp Leu Ala Tyr Leu Val Glu Gly Phe Pro Pro Arg Lys Val
 165 170 175

Asn His Phe Asn Pro Phe Glu Pro Leu Phe Val Arg Gln Val Ser Ala
 180 185 190

Val Val Ile Ser Leu Leu Ala His Phe Phe Val Ala Gly Leu Ser Ile
 195 200 205

Tyr Leu Ser Leu Gln Leu Gly Leu Lys Thr Met Ala Ile Tyr Tyr Tyr
 210 215 220

Gly Pro Val Phe Val Phe Gly Ser Met Leu Val Ile Thr Thr Phe Leu
 225 230 235 240

His His Asn Asp Glu Glu Thr Pro Trp Tyr Ala Asp Ser Glu Trp Thr
 245 250 255

Tyr Val Lys Gly Asn Leu Ser Ser Val Asp Arg Ser Tyr Gly Ala Leu
 260 265 270

Ile Asp Asn Leu Ser His Asn Ile Gly Thr His Gln Ile His His Leu
 275 280 285

Phe Pro Ile Ile Pro His Tyr Lys Leu Lys Lys Ala Thr Ala Ala Phe
 290 295 300

His Gln Ala Phe Pro Glu Leu Val Arg Lys Ser Asp Glu Pro Ile Ile
 305 310 315 320

Lys Ala Phe Phe Arg Val Gly Arg Leu Tyr Ala Asn Tyr Gly Val Val
 325 330 335

Asp Gln Glu Ala Lys Leu Phe Thr Leu Lys Glu Ala Lys Ala Ala Thr
 340 345 350

Glu Ala Ala Ala Lys Thr Lys Ser Thr
355 360